

Appl. No. 10/531,793
Reply to Office Action of 09/28/2007

Remarks

Rejections under 35 U.S.C. 102

In the 09/28/2007 office action, claims 1-8 were rejected as being anticipated by, or in the alternative, as obvious over U.S. 3,553,282 to Holub as summarized in item #2 shown below.

Holub discloses compositions comprising (A) from 5 to 95 parts of a siloxane containing polyamide (reading on presently claimed component B) and (B) from 95 to 5 parts of a silicon free polyamide resin (reading on presently claimed component A). The siloxane containing polyamide is obtained by reacting a tetracarboxylic dianhydride with an aminoorganosiloxane.

The disclosure of the reference meets the requirements of the present claims both in terms of the types of materials added, their contents and process of making. The onus is shifted to applicants to establish that the product of the present claims is not the same as or obvious from that set forth by the reference.

Applicant believes that the present claims 1-8 are patentably distinguished and unobvious in view of U.S. 3,553,282 (Holub) for the following reasons.

Applicant's present claim 1 relates to a composition comprising at least 80% of a reaction product resulting from melt mixing A) a nylon thermoplastic resin and the siloxane modified amide described as component B). Claim 5 relates to a process using the same components. Holub does not teach or suggest either components A or B as presently described in claim 1 or claim 5.

Holub fails to disclose nylon thermoplastic resins as component A). Nylon thermoplastic resins are characterized as polyamide polymers. Applicant respectfully submits that Holub teaches **polyimide** films having improved corona resistance (column

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1, lines 70-71). Holub does not teach or suggest adding a siloxane modified amide (as defined in present claim 1) to nylon (polyamide polymer) thermoplastic resins. Nylon, or any other polyamide based thermoplastic resin, are not suggested or taught in Holub. Rather, Holub teaches polyimides compositions derived from polyamide blend compositions of a polyamide acid siloxane and a silicon free polyamide acid (which are not nylon thermoplastic resins). Applicant respectfully submits that Holub's polyamide acid compositions do not encompass, teach or suggest nylon thermoplastic compositions, as per component A) of present claim 1. Evidence that Holub fails to teach or suggest nylon resins is shown in column 2, lines 29-33, which discusses the need to "cure" the polyamide acid compositions to a polyimide composition (not a nylon type polyamide). In contrast, nylons are polyamide polymers that have been cured to result in a thermoplastic resin.

Holub also fails to disclose a siloxane modified amide having the formula described as component B) in claim 1. Holub's siloxane modified amides are derived from the reaction of amino terminated siloxane with a polyamide acid resulting in -Si-Y-N-C(O)- links (where Y is a divalent hydrocarbon group) based structures. In contrast, the siloxane modified amide defined in claim 1 requires -Si-X-C(O)NH-Y-NH- links (where X is a linear or branched alkylene having 1-40 carbons and Y is a linear or branched alkylene having 1-40 carbons). These links are primarily derived from reacting an carboxy functional siloxane with a diamine (as described further in US 5,981,680).

Applicant respectfully submits that the present claims define an invention which is unobvious over Holub.

First, Applicant respectfully submits the U.S.C. 103(a) rejection does not provide a sufficient factual inquiry of obviousness as stated in *Graham v. John Deere Co.*, and further described in the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of the Supreme Court Decision in *KSR v. Teleflex Inc.*, (Federal Register/Vol. 72, No. 195, pages 57526-57535).

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In particular, Applicant respectfully submits the U.S.C. 103(a) rejection fails to determine the scope and content of the prior art, and subsequently fails to ascertain the differences between the claimed invention and the prior art. As discussed above, Holub primarily teaches polyimide films which are not nylon thermoplastics. Applicant believes the U.S.C. 103 rejection fails to account for a major difference in the cited prior art and the present claims, namely that Holub teaches polyimide films while the present claims are directed to compositions comprising at least 80% of a reaction product resulting from melt mixing a nylon thermoplastic resin and a siloxane modified amide as defined as component B). If the scope and content of the prior art are not determined properly, the differences between the prior art and claimed invention cannot be adequately evaluated. Thus, the U.S.C. 103 rejection does not establish a sufficient factual inquiry to support lack of obviousness according to the factors established in *Graham v. John Deere Co.*

Furthermore, Applicant believes Holub does not establish a prima facie case of obviousness because it fails the teaching/suggestion/motivation to combine test. As discussed above, Holub fails to teach components A) and B), let alone suggest such a combination to arrive at the present claims.

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In the 09/28/2007 office action, claims 1-8 were rejected as being anticipated by, or in the alternative, as obvious over Japanese 7-270803 as summarized in item #3 shown below.

JP '803 discloses compositions for liquid crystal displays comprising an polyamide having an aliphatic structure of formula (1), reading on presently claimed component A, and a silicone-modified polyamide of formula (2), reading on the presently claimed component B. See examples.

The disclosure of the reference meets the requirements of the present claims both in terms of the types of materials added, their contents and process of making. The onus is shifted to applicants to establish that the product of the present claims is not the same as or obvious from that set forth by the reference.

Applicant believes that the present claims are patentably distinguished and unobvious in view of Japanese 7-270803 (JP '803) for the following reasons.

JP '803 does not teach or suggest components A) and B) of the present claims. Applicant respectfully traverses the assertion that the structure of formula (1) in JP '803 reads on presently claimed component A) and silicone modified polyamide of formula (2) reads on presently claimed component B). As presently claimed, component A) requires a nylon thermoplastic resin. Applicant believes that formula (1) in JP '803 does not teach a polyamide considered as a nylon thermoplastic resin. Rather, it is described in JP '803 as a polyamide acid useful in liquid crystal alignments.

JP '803 also does not teach or suggest component B) as presently claimed. As noted above, the present formula for the siloxane modified amide (component B) requires -Si-X-C(O)NH-Y-NH- links, which are different than those in JP '803. Rather, JP '803 teaches links based on -Si-X-NH- C(O)-.

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Applicant further submits the U.S.C. 103(a) rejection does not provide a sufficient factual inquiry of obviousness as stated in *Graham v. John Deere Co.*, and further described in the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of the Supreme Court Decision in *KSR v. Teleflex Inc.*, (Federal Register/Vol. 72, No. 195, pages 57526-57535).

Applicant respectfully submits the U.S.C. 103(a) rejection fails to determine the scope and content of the prior art, and subsequently fails to ascertain the differences between the claimed invention and the prior art. Applicant believes the U.S.C. 103 rejection fails to account for a major difference in the cited prior art and the present claims, namely that JP '803 teaches compositions useful in liquid crystal alignments which are derived from polyamide acids (not nylon thermoplastic resins). In contrast, the present claims are directed to compositions comprising at least 80% of a reaction product resulting from melt mixing a nylon thermoplastic resin and a siloxane modified amide as defined as component B). If the scope and content of the prior art are not determined properly, the differences between the prior art and claimed invention cannot be adequately evaluated. Thus, the U.S.C. 103 rejection does not establish a sufficient factual inquiry to support lack of obviousness according to the factors established in *Graham v. John Deere Co.*

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In the 09/28/2007 office action, claims 1, 2, and 4-8 were rejected as being anticipated by, or in the alternative, as obvious over U.S. 6,362,288 to Brewer et al. as summarized in item #4 shown below.

Brewer et al disclose compositions comprising (A) a polyamide resin (reading on presently claimed component A), (B) a silicone base (not precluded from present claims), (C) a compatibilizer inclusive of siloxane-based polyamides having the formula per column 15, line 43 (reading on presently claimed component B) and additional (D) and (E) materials (not precluded from present claims). Examples B1 and B2 are noted of particular interest.

The disclosure of the reference meets the requirements of the present claims both in terms of the types of materials added, their contents and process of making. The onus is shifted to applicants to establish that the product of the present claims is not the same as or obvious from that set forth by the reference.

Applicant believes that the present claims are patentably distinguished and unobvious in view of U.S. 6,362,288 to Brewer et al (Brewer) for the following reasons.

Applicant's present claim 1 relates to a composition comprising at least 80% of a reaction product resulting from melt mixing A) a nylon thermoplastic resin and the siloxane modified amide described as component B). Brewer indeed discloses nylon thermoplastic resins (component A in present claims and in Brewer) and siloxane modified polyamides (as component C in Brewer and component B in present claims). However, Brewer fails to disclose such combinations resulting in a composition comprising at least 80% of a reaction product resulting from melt mixing the two.

Brewer teaches thermoplastic silicone elastomer vulcanizates based on nylons and a silicone base (component B in Brewer). As such, Brewer requires a minimum amount of silicone base, as defined by the ratios of silicone base to polyamide resin (ie Brewer's ratio of B/A) in column 12, lines 61-64 of Brewer, to be greater than 35:65. Furthermore, the amount of silicone modified polyamide (component C (iii) of Brewer) used is from 0.5 to 10 parts by weight for each 100 parts of polyamide (A) (see column 9, lines 58-60).

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Thus, even if the maximum amount of component C (iii) and minimum amount of component B) of Brewer were used, a composition comprising 80% of present component A) and component B) cannot be achieved. Thus, Brewer fails to disclose all the present claim limitations and does not anticipate the present invention.

Applicant further submits the U.S.C. 103(a) rejection does not provide a sufficient factual inquiry of obviousness as stated in *Graham v. John Deere Co.*, and further described in the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of the Supreme Court Decision in *KSR v. Teleflex Inc.*, (Federal Register/Vol. 72, No. 195, pages 57526-57535).

Applicant respectfully submits the U.S.C. 103(a) rejection fails to determine the scope and content of the prior art, and subsequently fails to ascertain the differences between the claimed invention and the prior art. Applicant believes the U.S.C. 103 rejection fails to account for a major difference in the cited prior art and the present claims. As discussed above relating to the novelty rejection, the present invention already differs from Brewer in the amounts of component A and B used. Furthermore, the present invention provides a solution to a completely different technical problem than the problem addressed by Brewer. Brewer is primarily concerned with altering the tensile strength or elongation of nylon thermoplastic resins by the incorporation of significant quantities of a silicone base in a nylon. The siloxane modified amides are added in smaller quantities to act as a compatibilizer in Brewer. Conversely, the present invention seeks to alter the hydrophilicity of nylon thermoplastic resins by making them more hydrophobic without altering physical properties like tensile strength or elongation (see Introduction for description of problem to be solved and Examples demonstrating improved hydrophobicity without significantly changing elongation). If the scope and content of the prior art are not determined properly, the differences between the prior art and claimed invention cannot be adequately evaluated. Thus, the U.S.C. 103 rejection does not establish a sufficient factual inquiry to support lack of obviousness according to the factors established in *Graham v. John Deere Co.*

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Furthermore, Brewer does not establish a prima facie case of obviousness because it fails the teaching/suggestion/motivation to combine test. As discussed above, one difference between the present claims and Brewer are the amounts of nylon thermoplastic resin and siloxane modified amides used. However, Brewer requires a minimum ratio of silicone base to polyamide resin to be 35:65, and teaches away from using lower amounts of silicone base (see column 12, lines 63-65) to arrive at the concentrations of components A) and B) as presently claimed. Furthermore, there is no suggestion in Brewer to use the concentrations/ratios of components A) and B) of the present claims, let alone suggest a solution to solve the problem of increasing hydrophobicity of nylon thermoplastic resins.

Rejections under 35 U.S.C. 103

Claims 9-12 were rejected as being unpatentable over U.S. 3,553,282 to Holub in item # 6 of the 09/28/2007 office action.

Claims 9-12 were rejected as being unpatentable over U.S. 6,362,288 to Brewer in item # 7 of the 09/28/2007 office action.

Claims 9 depends from claim 1, whereas claims 10, 11, and 12 depend on claim 9.

Applicant believes claim 1 is novel and non-obvious in view of the cited art for the reasons discussed above. Thus, Applicant respectfully submits dependent claims 9-12 are also novel and non-obvious.

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Double Patenting

Claims 1-12 were rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims of U.S. 6,362,288 (Brewer).

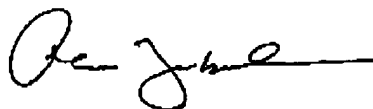
Applicant respectfully submits that the present claims define a non-obvious invention vs Brewer for the reasons stated above. Thus, Applicant traverses the double patenting rejection and relies on arguments submitted in support of non-obviousness as discussed above.

The present response is being submitted within the six-month statutory period for response to the outstanding Office Action. Applicant hereby authorizes the USPTO to charge deposit account 04-1520 for a one-month extension, and any other fees necessary, to maintain the pendency of the application.

In view of the above, it is respectfully submitted that the claims are in condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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